



# Data Visualization (InfoGraphic) Tools for the Novice



Meagan Duever ([mjduever@k-state.edu](mailto:mjduever@k-state.edu)) Data Services Librarian, Kansas State University  
and Jonathan Bacon ([jonathanpbacon@gmail.com](mailto:jonathanpbacon@gmail.com)) Retired Director, Ed Tech Center, JCCC

# Data Visualization

“...rightly or wrongly, most [students] think of themselves as visual learners”

“The risk, however, is that these pictorial projects will fail to actually illuminate any information and will instead result in a mess of colors, layouts, and fonts.”

# Data Visualization

“Students can ‘read’ images to comprehend the essential meanings.”

“Because they blend words, pictures, and data, infographics can be key tools to simplify and reimagine course material.”

“Infographics also make for elegant visual presentations to arrange facts and figures.”

**Content First,  
Pretty  
Second!**





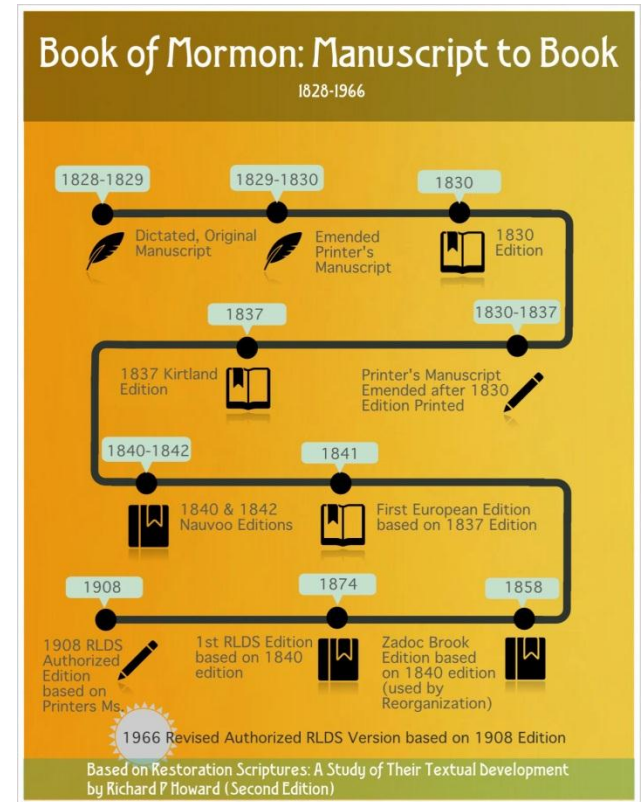
# Data Visualization Tools

- Easel.ly
- Dipity
- TimeToast
- PowToon
- Google Fusion Tables



# Easel.ly

- Create Online
- Public or Private
- Visual Themes (Vthemes)
- Objects from Library or Uploaded
- Text
- Uses Artboard Metaphor
- Save & Download or Link
  - Low, High Quality or PDF







# Candy Bars vs Stamps

## Candy Bars

1900-04

Size .5 Oz.  
Costs 1 Cent  
2 Cents per Oz.



1925-29

Size 1.5 Oz.  
Costs 5 Cent  
3.3 Cents per Oz.



1950-54

Size 1 Oz.  
Costs 5 Cents  
5 Cents per Oz.



1975-79

Size 1.2 Oz.  
Costs 20 Cents  
16.6 Cents per Oz.

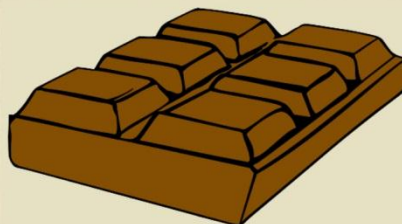


2005-09

Size 1.6 Oz.  
Costs 110 Cents  
50 Cents per Oz.



Candy bars &  
stamps reflect  
effects of inflation  
The increase in  
cost per stamp  
vs. cost per ounce  
of candy bar remains  
fairly equal. Why?



## Postage Stamps

1900-04

2 Cents



1925-29

3 Cents



1950-54

4 Cents



1975-79

15 Cents



2005-09

44 Cents



## Indicators of Inflation

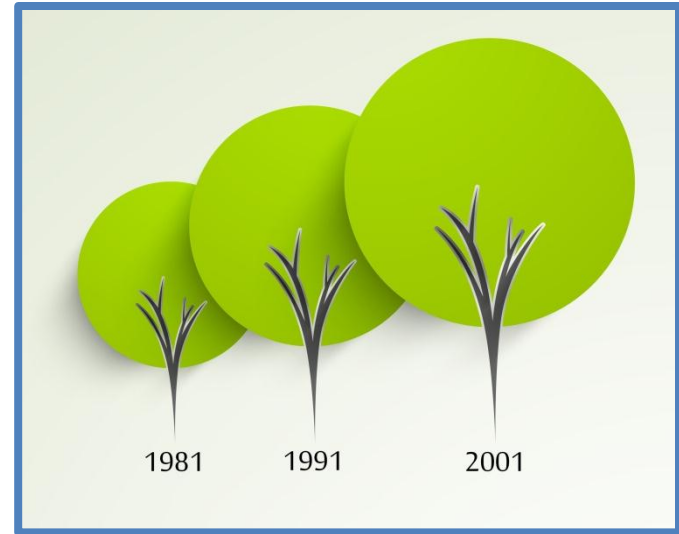


# Easel.ly Tips

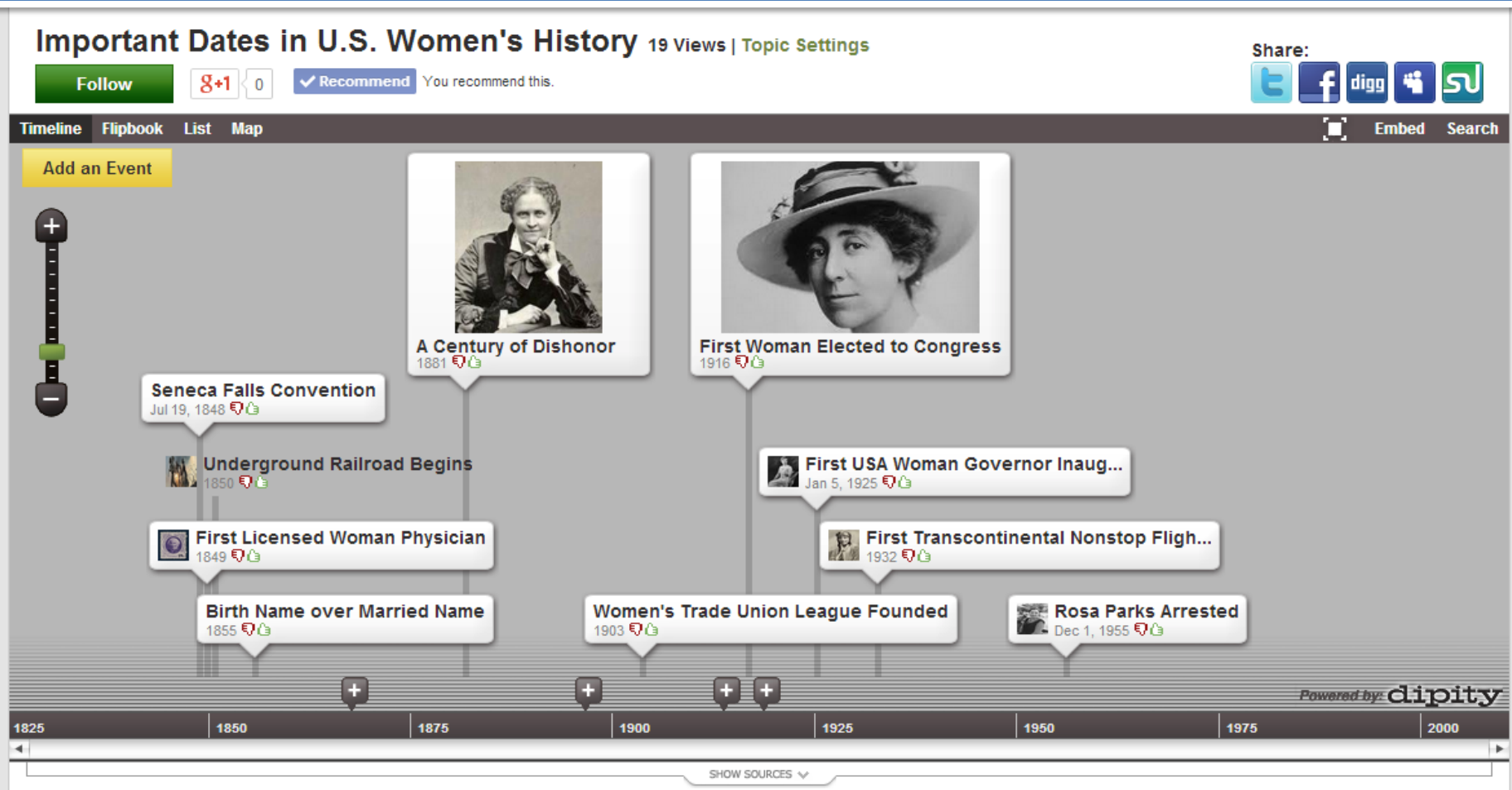
- To apply a background, object or text block drag it onto you page
- Save often
- Cannot align text in current version, must use spaces
- Must select item and click Trash Can icon to delete
- Public infoGraphics available in the Easel.ly gallery, free to use
- You can import images to use in infoGraphics
- If an imported image's background is not transparent
  1. Open image in Photoshop
  2. Double-click the background layer to unlock
  3. Select and delete background
  4. Save As > PNG
  5. Import PNG file into Easel.ly

# Dipity (Timeline Creator)

- Important dates & events
- Viewed as Timeline, List, Flipbook or Map
- Link videos, images, web pages



# Dipity (Timeline Creator)



## Description

A chronology of events in women's history in the United States.

Created by [jpbacon](#) on Jun 13, 2014

Last updated: 06/16/14 at 08:00 PM

## Followers

Important Dates in U.S. Women's History has no followers yet. Be the first one to [follow](#).



# Dipity (Timeline Creator)

## Editing Underground Railroad Begins



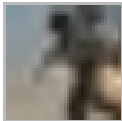
Title Underground Railroad Begins

Date 1850

12

Description Harriet Tubman begins Underground Railroad to lead slaves to freedom

Picture



Upload

or

<http://cdn.dipity.com/uploads/ever>

OK

Link <http://www.history.com/topics/black-history/unc>

Location

Video URL

Cancel

Save

# **timetoast:** Timeline Creator

- Supports latest two versions of major browsers (IE, Safari, Chrome, Firefox, Opera)
- 40-50 events max recommended
- Viewed as Timeline or List (for printing)
- Timelines: Unpublished and published
- Can embed views in web pages
- Required Flash Player 9 or above and Javascript enabled

[Edit timeline](#)[Collaborate](#)

## 2TB Secure Cloud Storage

[egnyte.com/Free-Trial](http://egnyte.com/Free-Trial)

Store, Share & Backup Files Online Free Trial. No Credit Card Required



## Mormon War of 1830s in Northern Missouri

Timeline created by jonathanpbacon in History

23 Jul 1833, Mormons Agree to Leave Jackson County

1 May 1834, Zion's Camp March Begins

30 Jun 1834, Zion's Camp Disbands

2 Aug 1831 - 1 May 1839 Mormons in Missouri

[Embed](#)[f Like](#)[t Tweet](#)[Timeline](#)[List](#)

DESIGNERAPPAREL by POPSUGAR

Lilly Pulitzer  
SHOP NOW!



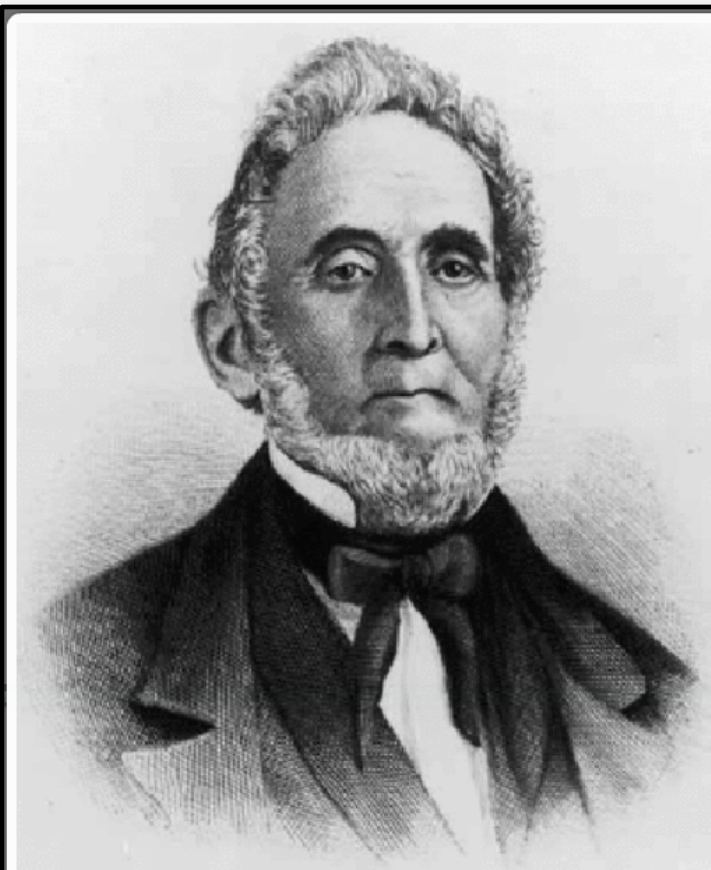
6 Aug 1838, Gallatin Brawl on Election Day

## Sidney Rigdon's "Salt Sermon"

17 Jun 1838

Sidney Rigdon's "Salt Sermon" threatens Mormon dissenters, including lawyer Oliver Cowdery. Smith and Rigdon want to nip in the bud such legal actions as took place in Kirtland.

Compton, Todd M.; Leland Homer Gentry (2012-01-26). Fire and Sword: A History of the Latter-day Saints in Northern Missouri, 1836-39 (ebook Part 1) (Kindle Locations 94-95). Greg Kofford Books. Kindle Edition.



Embed

Like

Tweet

Timeline

List





# Mormon War of 1830s in Northern Missouri

Timeline created by jonathanpbacon in History

| Event Date:   | Event Title:  | Event Description:  |
|---|---|---|
|  2nd Aug, 1831    | <b>Independence, MO Dedicated as Center (Gathering) Place</b> | LDS leaders, visiting Independence, Jackson County, Missouri, dedicate it as a gathering place for the Saints, the center place of Zion. However, Kirtland, Ohio, is still the main church headquarters. Compton, Todd M.; Leland Homer Gentry (2012-01-26). <i>Fire and Sword: A History of the Latter-day Saints in Northern Missouri, 1836-39</i> (ebook Part 1) (Kindle Locations 55-56). Greg Kofford Books. Kindle Edition.                           |
|  20th Jul, 1833   | <b>Mormon Press Destroyed</b>                                 | Anti-Mormon Missourians destroy a Mormon press, the Evening and Morning Star office, and tar and feather two Mormon leaders, including Bishop Edward Partridge. Compton, Todd M.; Leland Homer Gentry (2012-01-26). <i>Fire and Sword: A History of the Latter-day Saints in Northern Missouri, 1836-39</i> (ebook Part 1) (Kindle Locations 60-61). Greg Kofford Books. Kindle Edition.  |
|  23rd Jul, 1833  | <b>Mormons Agree to Leave Jackson County</b>                  | Anti-Mormon mobbings continue; Mormons agree to leave Jackson County by January 1, 1834. Compton, Todd M.; Leland Homer Gentry (2012-01-26). <i>Fire and Sword: A History of the Latter-day Saints in Northern Missouri, 1836-39</i> (ebook Part 1) (Kindle Location 62). Greg Kofford Books. Kindle Edition.   |
|  31st Oct, 1833 | <b>Mormons Relocate to Clay County</b>                        | Anti-Mormon mobbings in the Whitmer settlement, west of Independence, and in Independence. About 1,200 Saints subsequently flee from Jackson County, Missouri, and relocate north of the Missouri River, in Clay County, Missouri. Compton, Todd M.; Leland Homer Gentry (2012-01-26). <i>Fire and Sword: A History of the Latter-day Saints in Northern Missouri, 1836-39</i> (ebook Part 1) (Kindle Locations 63-64). Greg Kofford Books. Kindle Edition. |

## Edit Event:



Choose an image

### Edit your event details:

Title: \*

Smith and Rigdon Visit Far West

Date: \*

6



Nov



1837

Description:



Insert link

Joseph Smith and Sidney Rigdon visit Far West to arrange for new sites for Mormon settlement. Also, back in Kirtland, the Kirtland Safety Society Anti-Banking Company (LDS bank) is failing, causing much open dissent and lawsuits aimed at church leaders.



\* required fields



Delete this event



Update Event



# Google Fusion Tables

What Are They?





# Google Fusion Tables

- Background
  - Experimental data visualization web app gathers, visualizes & shares data tables
    - “Experimenting” since 2009
    - Regular feature on Google Drive (2011)
  - Pie charts, bar charts, lineplots, scatterplots, timelines & geographical maps
  - Use public data, import your own, or use in combination
  - Saved in Google Drive, shareable



# Why Use Them?

- For data with spatial component
  - Different perspective than pie or bar graph
    - Patterns emerge not initially apparent
  - Easy entry point for spatial data work
    - No costly software
    - Relatively easy to use
    - Fewer formats to mess with
- For data without a spatial component....





Some Fancy Examples

# The Montreal Gazette Example

Choropleth Map: areas are shaded or patterned in proportion to the measurement of the statistical variable being displayed on the map

View web map

<http://www.montrealgazette.com/news/censusmap.html>

Background:

<http://blogs.montrealgazette.com/2012/02/10/mapping-population-densities-by-the-block/>



# Mapping population densities by the block

February 10, 2012. 5:24 pm • Section: Data Points

Share

11

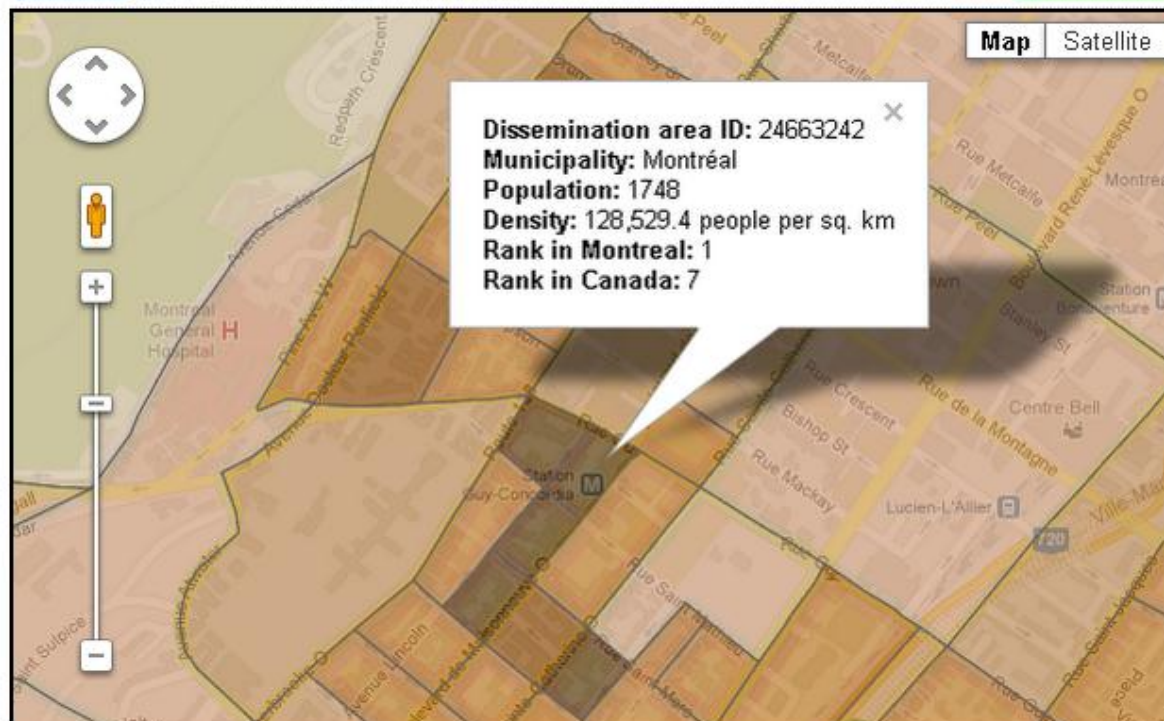
Tweet

54

g+1

4

ShareThis



AA Increase Font Size

Print Page

RSS Feed

[Click here to see the map and fun stats about Montreal](#)

Census data is catnip for data journalists. There's a lot of neat visualizations you can make with it.

We have these [nice interactive maps](#) made by CP with population figures for every census tract at major metropolitan areas. It will be updated with more data as new census figures come out throughout the year.

I wanted to look even deeper, at the block level. StatsCan also has good data for census dissemination areas (DA), which is a group of one or more neighbouring blocks with a population of at least 400. But instead of just mapping the raw data, I wanted to see how each area's population density compared with the rest of the city and the country.



Posted by:  
Roberto  
Rocha

## RECENT POSTS FROM THIS AUTHOR

[15 maps on the health of Montreal](#)

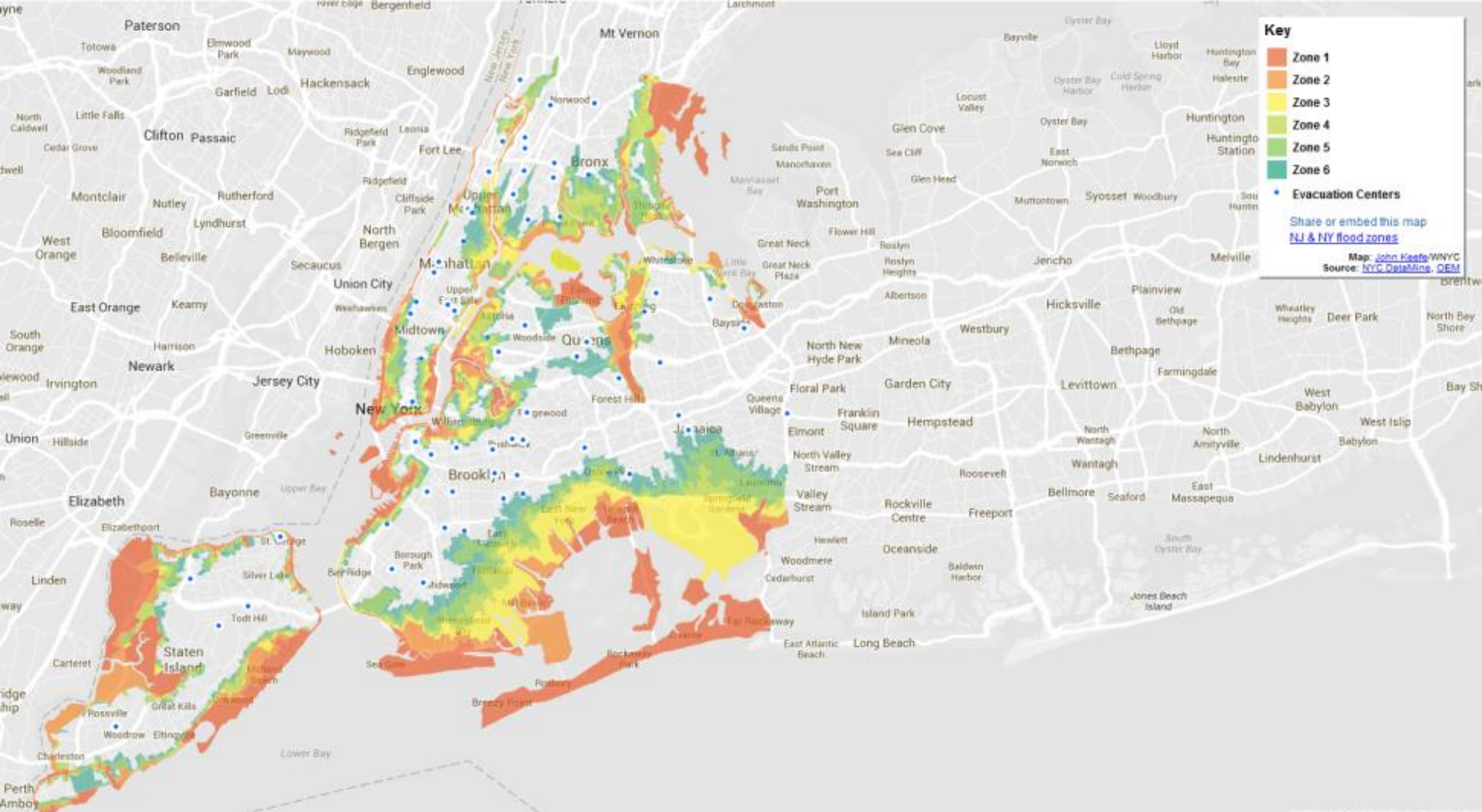
Posted on Jun 9, 2014



# Evacuations for Hurricane Irene in NYC

- Instructions are a how-to for journalists
- Not overly technical explanations





View at [project.wnyc.org/news-maps/hurricane-zones/hurricane-zones.html](http://project.wnyc.org/news-maps/hurricane-zones/hurricane-zones.html)

Background [www.poynter.org/how-tos/digital-strategies/141788/how-to-map-data-onto-counties-districts-using-shpescape/](http://www.poynter.org/how-tos/digital-strategies/141788/how-to-map-data-onto-counties-districts-using-shpescape/)

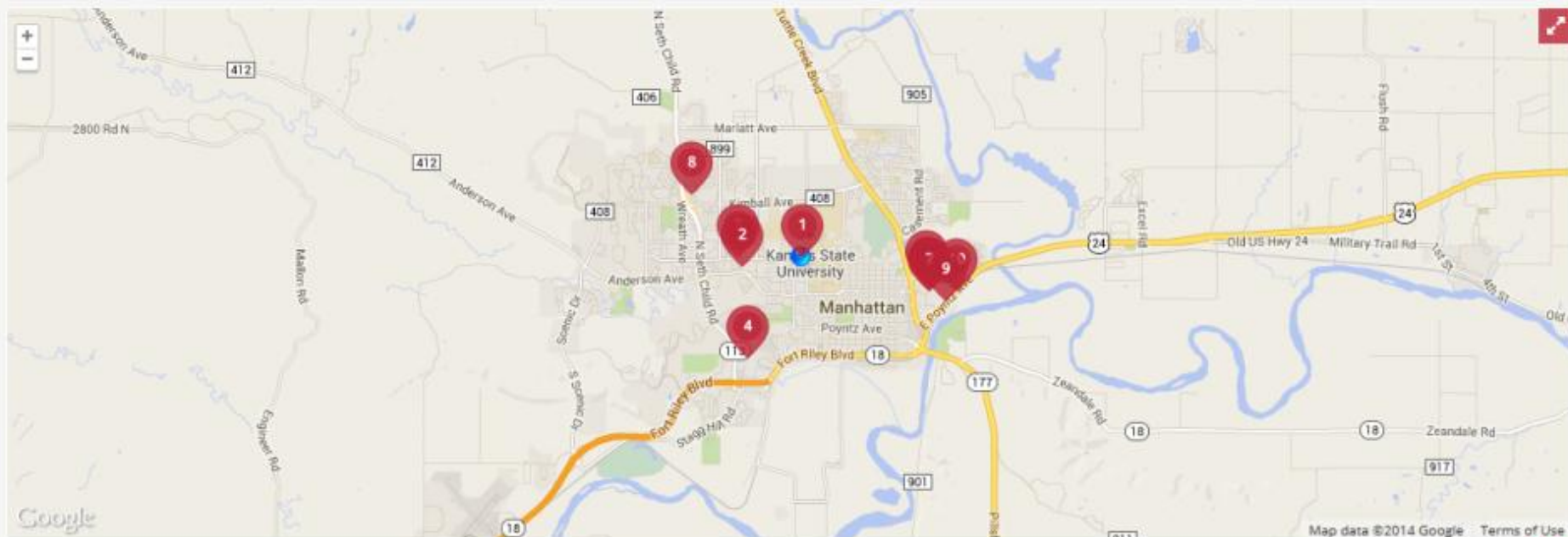


# HealthMap Vaccine Finder



- Started as a Google Fusion Table
- Now run by Healthmap

<http://flushot.healthmap.org/>



### 1. Riley County Health Department

2030 Tecumseh Road, Manhattan, KS 66502

📞 785-776-4779 📍 [Directions](#) 🌐 [Website](#)

**Hours:** Monday: 8:00 - 4:30 Tuesday: 8:00 - 4:30 Wednesday: 8:00 - 4:30 Thursday: 9:00 - 6:30 Friday: 8:00 - 11:30

**Vaccines:** Hepatitis A, Hepatitis B, HPV, Meningococcal, MMR, Pneumococcal, Shingles/zoster, Td, Tdap, Varicella

### 2. Walgreens

2719 Anderson Ave., Manhattan, KS 66502-2803

📞 785-587-8326 📍 [Directions](#) 🌐 [Website](#)

**Hours:** M-F 9:00 (AM)-9:00 (PM) Sat 9:00 (AM)-6:00 (PM) Sun 10:00 (AM)-6:00 (PM)

**Vaccines:** Hepatitis A, Hepatitis B, HPV, Meningococcal, MMR, Pneumococcal, Shingles/zoster, Td, Tdap, Varicella



*Some Not-So-Fancy  
Examples*

*Namely mine*



# My first Fusion Table

Meagan Duever ▾

Share

SmallWorld\_final\_1

Imported at Mon Feb 18 14:18:08 PST 2013 from SmallWorld\_final\_1.csv.

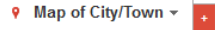
[Add Attribution](#) - Edited on December 10, 2013

File Edit Tools Help

Rows 1

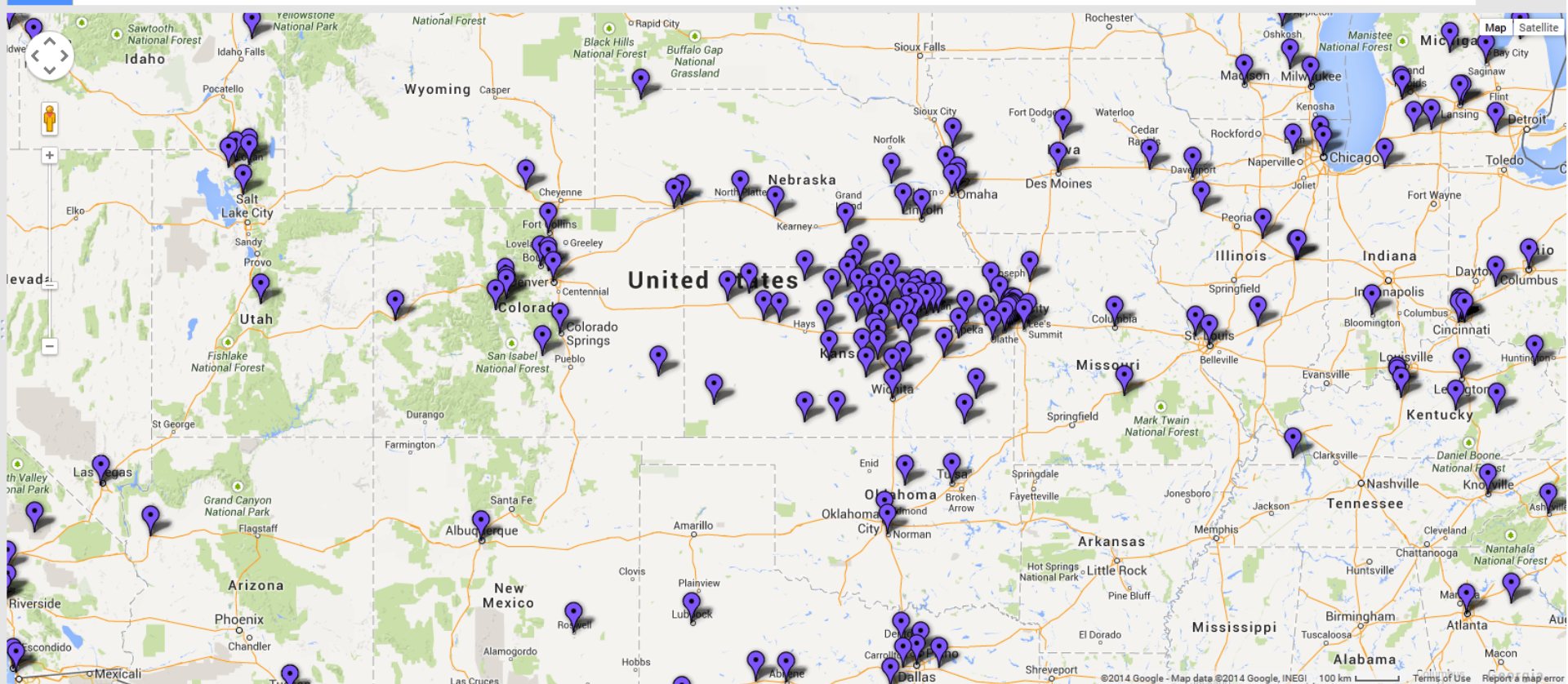
Cards 1

Map of City/Town ▾



Filter ▾ No filters applied

Saved 314 rows







# Where To Start

My Drive

CREATE



Folder



Fusion Table



Document



Presentation



Spreadsheet



Form



Drawing

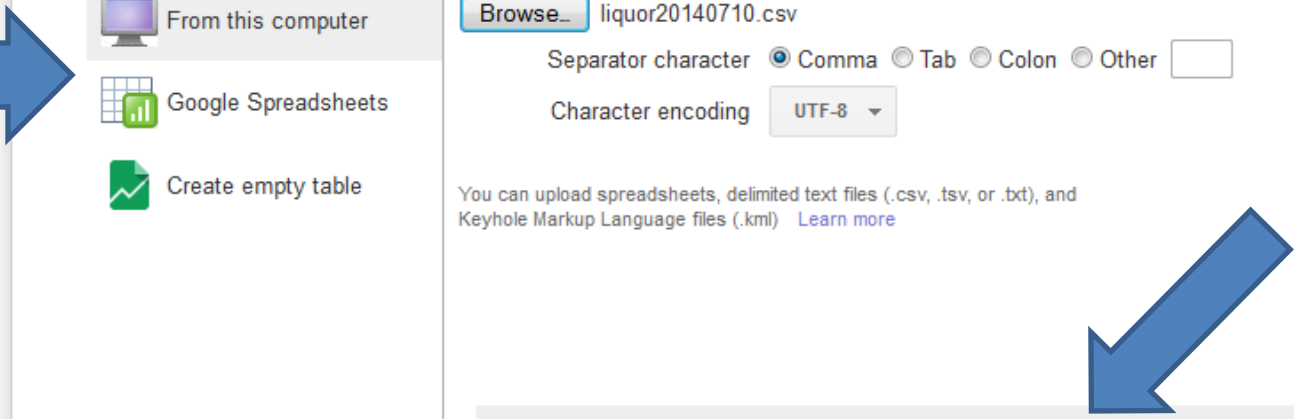
Connect more apps

My Data Roles (Recovered)


If you don't see it, click on  
'Connect more apps'





# Four Ways To Enter Data



Import new table

 From this computer

 Google Spreadsheets

 Create empty table


**Browse...** liquor20140710.csv

Separator character ☒ Comma ☐ Tab ☐ Colon ☐ Other

Character encoding **UTF-8** ▼

You can upload spreadsheets, delimited text files (.csv, .tsv, or .txt), and Keyhole Markup Language files (.kml) [Learn more](#)

Or search public data tables



**New to Fusion Tables?**

Take a peek! [Play with a data set](#) or [try a tutorial](#).

**Cancel** **« Back** **Next »**

# Geocoding Is Automatic

## SmallWorld\_final\_1

Imported at Mon Feb 18 14:18:08 PST 2013 from SmallWorld\_final\_1.csv.

[Add Attribution](#) - Edited on December 10, 2013

File Edit Tools Help

Rows 1 ▾

Cards 1

Map of City/Town



Filter ▾ No filters applied

201-300 of 314

| City/Town               | Who has Lived here | Who Currently Lives Here | Who is Originally from here | Whose spouse has lived here |
|-------------------------|--------------------|--------------------------|-----------------------------|-----------------------------|
| Omaha, NE               |                    |                          |                             |                             |
| Osborne, KS             |                    |                          |                             |                             |
| Oshkosh, WI             |                    |                          |                             |                             |
| Ottawa, Ontario, Canada |                    |                          |                             |                             |
| Overland Park, KS       |                    |                          |                             |                             |
| Owsley, KY              |                    |                          |                             |                             |
| Patterson, NJ           |                    |                          |                             |                             |

# Latitude/Longitude Too

Meagan Duever ▾

Share

liquor20140710

Imported at Thu Jul 10 13:59:28 PDT 2014 from liquor20140710.csv.

Edited at 3:59 PM

File Edit Tools Help

Rows 1 ▾

Cards 1

Map of Latitude

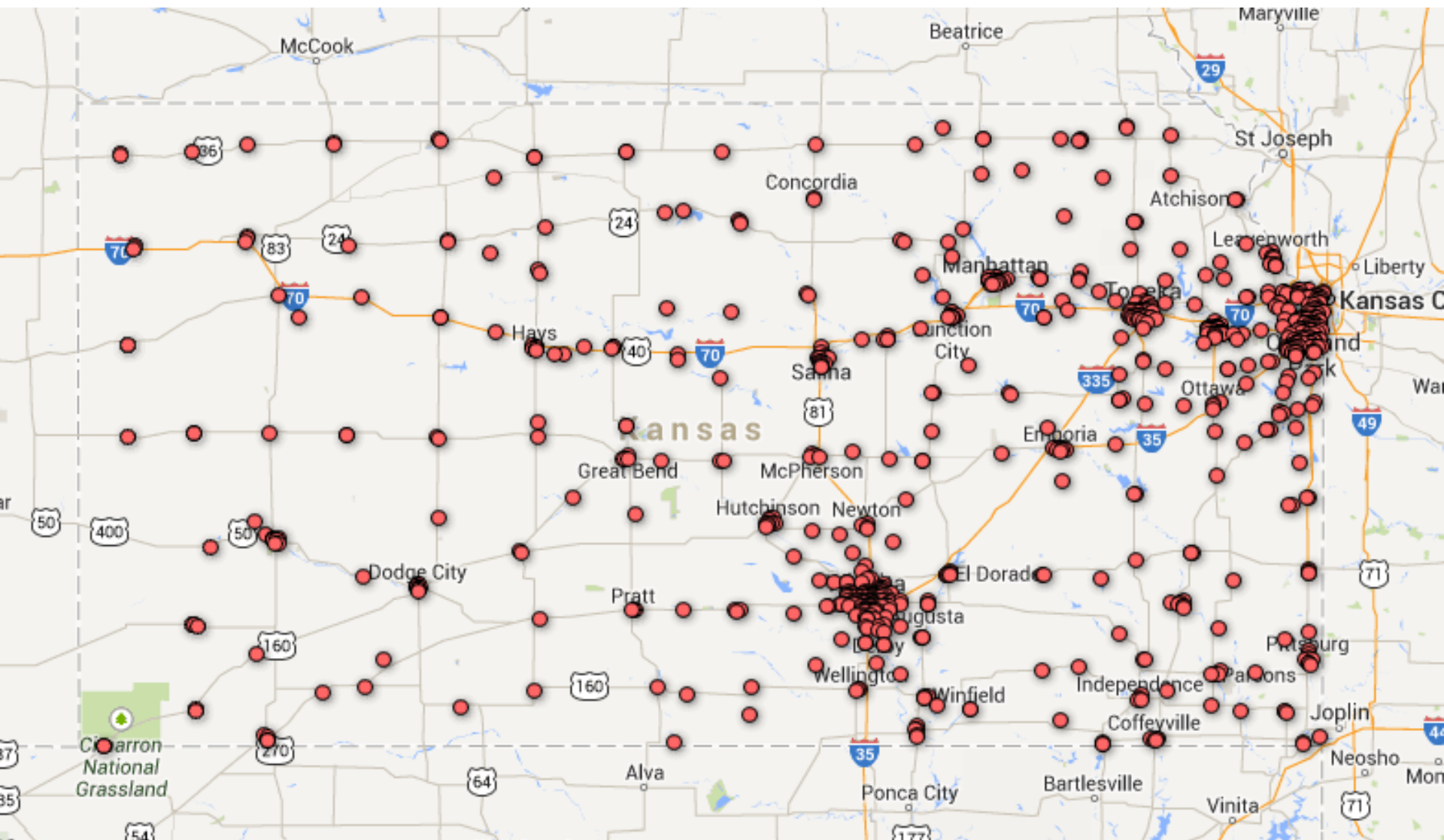
Filter ▾

No filters applied

Saved

1-100 of 754

| Company Name                  | Executive First Name | Executive Last Name | Address                 | City        | State | ZIP Code | Latitude  | Longitude   | Locati... | Location Sales Volume Range | Location Sales Volume Act... |
|-------------------------------|----------------------|---------------------|-------------------------|-------------|-------|----------|-----------|-------------|-----------|-----------------------------|------------------------------|
| 10th Avenue Liquors           | Carroll              | Bohannon            | 5111 10th Ave           | Leavenworth | KS    | 66048    | 39.266948 | -94.927957  | 2         | \$500,000-1 Million         | \$550,000                    |
| 10th Street Liquor            | Terry                | Gartner             | 2926 SW 10th Street Ave | Topeka      | KS    | 66604    | 39.042033 | -95.728221  | 3         | \$500,000-1 Million         | \$825,000                    |
| 10th Street Liquor Stop       |                      |                     | 5208 10th St            | Great Bend  | KS    | 67530    | 38.362022 | -98.803177  | 3         | \$500,000-1 Million         | \$825,000                    |
| 12th Street Liquor            |                      |                     | 200 N 12th St           | Marysville  | KS    | 66508    | 39.842425 | -96.642879  | 2         | \$500,000-1 Million         | \$550,000                    |
| 13th Street Liquor/Party Shop | Joseph               | Taylor              | 1305 Washington Blvd    | Kansas City | KS    | 66102    | 39.118864 | -94.643554  | 6         | \$1-2.5 Million             | \$1,650,000                  |
| 17th Street Retail Liquor     |                      |                     | 2419 E 17th St N        | Wichita     | KS    | 67214    | 37.715396 | -97.307545  | 3         | \$500,000-1 Million         | \$825,000                    |
| 2 Bags Brew LLC               | Nancy                | Doris               | 204 W Highway 56        | Satanta     | KS    | 67870    | 37.440285 | -100.985587 | 2         | \$500,000-1 Million         | \$550,000                    |
| 2 Lane Liquor                 | Jeff                 | Parsons             | 600 W Main St           | Hill City   | KS    | 67642    | 39.364596 | -99.848842  | 4         | \$1-2.5 Million             | \$1,100,000                  |
| 23rd Street Liquor            | Darwin               | Heyd                | 945 E 23rd St           | Lawrence    | KS    | 66046    | 38.94267  | -95.223944  | 4         | \$1-2.5 Million             | \$1,100,000                  |
| 3 Guys Liquor                 | Richard              | Towe                | 303 N Main St           | Ottawa      | KS    | 66067    | 38.620716 | -95.268028  | 7         | \$1-2.5 Million             | \$1,925,000                  |
| 4 Corners Liquor Store        | Brent                | Tuzicka             | 115 E Union St          | Rush Center | KS    | 67575    | 38.465717 | -99.305069  | 1         | Less Than \$500,000         | \$275,000                    |
| 77 Liquor Store               |                      |                     | 225 S US Highway 77     | Douglass    | KS    | 67039    | 37.517914 | -97.00499   | 2         | \$500,000-1 Million         | \$550,000                    |
| 8th Street Liquor             | Chandler             | Schumacher          | 235 W 8th St            | Hays        | KS    | 67601    | 38.872007 | -99.33421   | 5         | \$1-2.5 Million             | \$1,375,000                  |



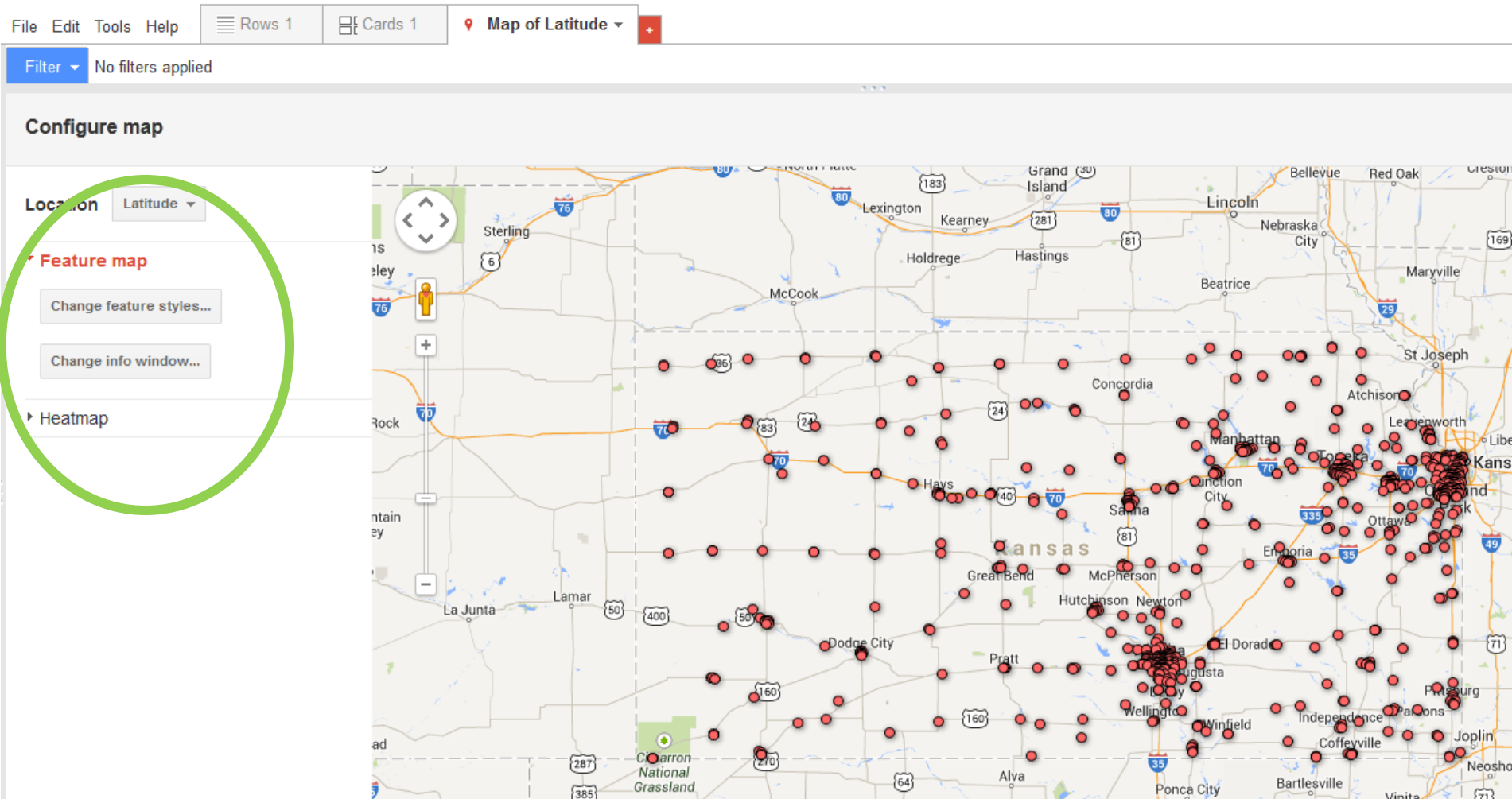
# Two Types Of Maps

liquor20140710

Imported at Thu Jul 10 13:59:28 PDT 2014 from liquor20140710.csv.

Edited at 3:59 PM

Other types available is using polygons





# Two Types Of Maps

liquor20140710

Imported at Thu Jul 10 13:59:28 PDT 2014 from liquor20140710.csv.

Edited at 3:59 PM

File Edit Tools Help

Rows 1

Cards 1

Map of Latitude

Filter No filters applied

## Configure map

Location Latitude

Feature map

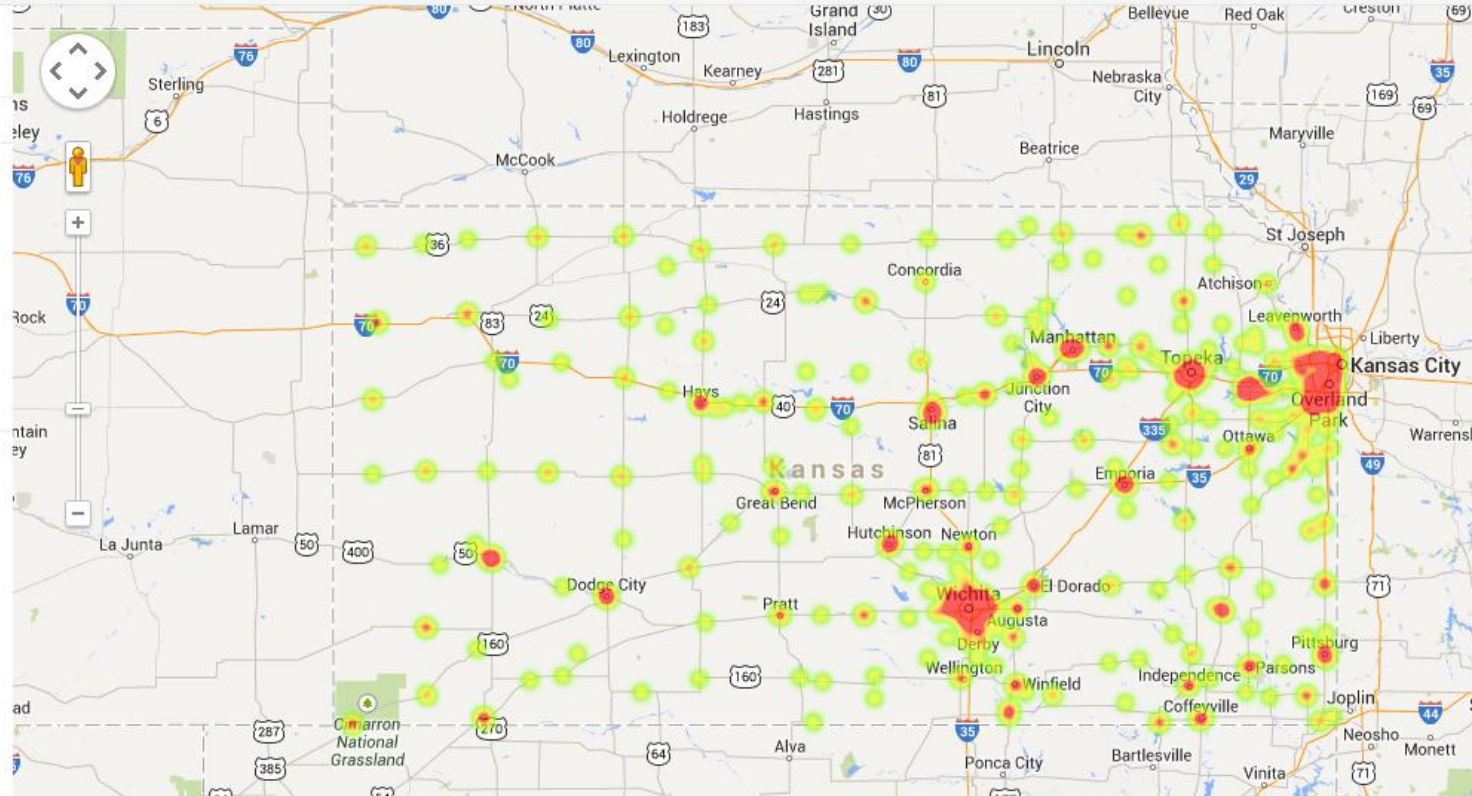
Heatmap

Radius 10

Opacity 60%

Weight No weighting

[Learn more](#)



# Want Pictures?

species: *Astraptes LOHAMP*  
Caterpillar, side view



sex: female  
host plant species: *Hampea appendiculata*  
host plant family: Malvaceae

- Include pictures
  - Create a row in table
  - Paste in URL
  - Picture appears like other variables

# Tips To Get Started

- Start with the geography
  - Can do city/town
    - One point per place!
  - If you do points for states, it puts one point in the middle
    - Get polygons instead
  - Can do latitude/longitude
    - Best if many points close together
  - Also can do addresses
    - Need to be complete
- Other columns show up as you hover over the points
  - Can turn columns 'off' and 'on'

# More Advanced

- Merging files and using polygons
  - Google: census kml
    - <https://www.census.gov/geo/maps-data/data/tiger-kml.html>
      - Download then unzip
      - .kmz is a zipped .kml
- Sharing your maps
- Collaborating with others
- Several tutorials available



# PowToon

*PowToon: a Data  
Visualization Tool*

# PowToon

The screenshot displays the PowToon Business software interface. The central stage features a presentation slide with a green circle containing a white person icon, followed by a large 'VS' text, and the title 'PowToon: a Data Visualization Tool' in green script. On the left, a vertical panel shows five slide thumbnails, each with a 'Camera Down' button. The top toolbar includes icons for New, Save, Cut, Copy, Paste, Sound, Image, Add Text, and Re-Publish, along with a text formatting menu. The right sidebar contains various asset categories: My Styles, Infographic, Text Effects, Image Holders, Business, Education, Signs, Money, Transport, General, Weather, Info, and Social Networks. At the bottom, a timeline shows a 10-second duration with a playhead at 3 seconds and a series of icons representing different objects and characters.

Annotations with red outlines and white text identify key interface elements:

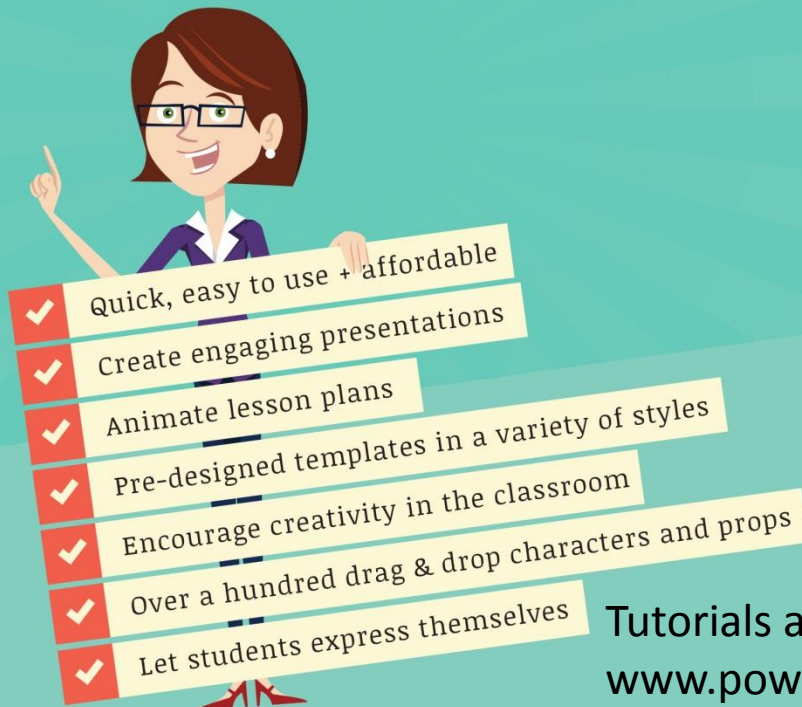
- Styles**: Points to the 'My Styles' section in the right sidebar.
- Text Options**: Points to the 'Text Effects' section in the right sidebar.
- Objects or Graphics**: Points to the 'Image Holders' and 'Business' sections in the right sidebar.
- Stage**: Points to the central presentation slide area.
- Timeline**: Points to the bottom timeline and playhead controls.

*Keeping students engaged is hard, but...*

**PowToon**

**can excite students  
of all ages in any classroom**

Create awesome presentations and animated videos with PowToon to explain difficult topics



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Tutorials at

[www.powtoon.com/blog/category/videos/tutorials/](http://www.powtoon.com/blog/category/videos/tutorials/)

# Building Blocks For Data Visualization

- [GraphicStock.com](http://GraphicStock.com)
  - 7 days free downloads (must provide credit card & cancel prior to 7 day period), \$49 monthly, \$588 yearly, \$99 special after 7-day trial
- [Dreamstime.com](http://Dreamstime.com)
  - Free images or \$.20 and up, purchase using credits (11 @ \$14.99, 15 @ \$17.99 & so on)
- [MightyDeals.com/freestuff](http://MightyDeals.com/freestuff)
- [Pixeden.com](http://Pixeden.com) paid/free stuff





# More Building Blocks

- Creative Commons Open Source (Photo, Audio, Multimedia) Search
  - <http://goo.gl/nc1zmu>
  - Examples: [photopin.com](http://photopin.com), National Gallery of Art [images.nga.gov](http://images.nga.gov)
- <http://tuvalabs.comm/datasets>
  - Such as Sea Rise Level in US, Products Recovered Thru Recycling, Gender-wise Educational Attainment in US, and so on.



# Reading Resources

- Articles
  - The Design of Information  
<http://goo.gl/1ejguf>
  - 10 Free Timeline Creation Tools  
<http://goo.gl/6VdZUV>



Mobile marketing

